# Cremation Versus Earth-Burial

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BY

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# INTRODUCTORY

THIS lecture is published under the auspices of the Cremation Association of America, not only for the purpose of individual propaganda work, but in the hope that it will be made the basis of many other addresses throughout the country. It is herewith reproduced as it was written—for the purpose of public delivery it naturally had to be curtailed. If **you** believe in Cremation, spread the gospel of incineration wherever and whenever you can, among your friends and relatives, in your clubs and societies—upon every suitable occasion.

Those who wish to help the propaganda of cremation in general throughout the United States and Canada can do so by becoming Life or Associate Members of the Cremation Association of America—the former by remitting one payment of $25 to our treasurer, Mr. Frank L. Cobb, 171 Walk Hill St., Roslindale Station, Boston, Mass., and the latter by the annual payment of $1.00. Life Members are entitled to the membership diploma of the Association without further charge. If desired, it will also be supplied to Associate Members upon an extra payment of $1.00. All members are, of course, entitled to the publications of the Association gratis.

For some of the material incorporated in this address, the author wishes to acknowledge his indebtedness to a booklet, entitled "Cremation," which was published by the Massachusetts Cremation Society a few years ago.

Ladies and Gentlemen:

*A LONG LIFE TO YOU AND A MERRY ONE. BUT WHEN THE INEVITABLE END COMES, WHICH SHALL IT BE—BURIAL OR CREMATION?*

My discourse of this evening is intended to help you solve a problem that comes to us all in the course of time, but that is happily postponed in most instances until the period when life has lost its charm, when we are footsore and weary from our extended pilgrimage and are longing for a well-earned rest. Though we naturally dread dissolution, it is useless for us to complain of death in a world where everything is dying—all visible matter around us is changing—decay following reproduction and reproduction decay. Nothing is eternal, in the economy of nature, but space, atoms, and force; what we see is transitory and must pass away, but the universe considered as a whole is unchangeable.

In dealing with this question, I realize that we cremationists need to be very tolerant toward those who do not agree with us, because we are contending against deeply rooted customs and sentiments. We cannot enter upon any new path, or depart from any established precedent without shocking the minds of a great many who have become used to the old order of things. Let us then, I repeat, be very tender and patient with those who are not willing at once to consign all that is dear to the flames instead of to the tomb. It is a different matter when we come to the other side of the question, namely that which concerns public health. Here, indeed, we do not need to pause, for there can be no hesitation between the danger of health from the slow, lingering process of decay and the absolutely sanitary condition of cremation.

All that has been said notwithstanding, should cremation to any one still present distressing features, let him remember that neither science, philosophy nor religion can devise a method by which the parting from the form of one we have loved can be other than distressing. Let him remember that, although the thought of cremation may arouse unpleasant emotions, yet the entire process is complete within an hour, while, by burying, the revolting phases continue for years, and may outlast a century.

People wonder why we cremationists devote so much of our lives to the spreading of the gospel of incineration. It is a matter that is easily explained. We all try to do good in our own way, restricted though it be. We cremationists here in America are trying to do good to our own time and generation and to those who come after us by making a strong effort to prevent the horrible conditions attending earth burial in the overcrowded sections of Europe and by substituting the far more humane, reverent and esthetic practice of incineration for the grewsome but traditional custom of inhumation. If we required a warrant, it could be found in the following immortal words of the late Frances E. Willard, who was one of the most consistent cremationists that ever lived: "I have the purpose to help forward progressive movements, even in my latest hours, and hence hereby decree that the earthly mantle which I shall drop ere long, when my real self passes onward to the world unseen, shall be swiftly enfolded in the flames and rendered powerless harmfully to affect the health of the living. Let no friend of mine say aught to prevent the cremation of my cast-off body. The fact that the popular mind has not come to this decision renders it all the more my duty, who have seen the light, to stand for it in death, as I have sincerely meant in life to stand by the great cause of poor oppressed humanity."

## The History of Cremation.

Before we enter upon a consideration of cremation from every point of view, it may be interesting to cast a retrospective glance, necessarily brief, at its history. Cremation is nothing new or faddish; in fact, it is a practice of great antiquity. At the beginning of the Christian era it was the prevailing custom of the civilized world, with the exception of Egypt, where bodies were embalmed; Judea, where they were buried in sepulchers, and China, where they were buried in the earth. The Greeks, fifteen centuries before Christ, invariably buried their dead; but in time they learned the advantages of cremation, and the latter practice became universal; suicides, unteethed children, and persons struck by lightning alone being denied the right. The Romans, who had originally inhumed, borrowed, in turn, the sanatory practice from the Greeks, and from the close of the Republic until the end of the Fourth century of our era, burning on the pyre was the usage regarded as most honorable and appropriate. At first it is not probable that the funeral customs of the Christians differed in any marked respect from the customs of those who clung to the ancient religions. The Christians interred in the same places, and they afford us at this period a curious illustration of the blending of the new faith with the old, by painting and engraving upon their sepulchers in the catacombs of Rome representations of the heathen gods and goddesses, and even the customary invocations to the deities of the nether world. In time the difference became greater, and no sooner had the Christian religion become a power in the state than its followers, always inimical to cremation, made haste to abolish the practice. In doing so, they were not influenced by the scriptures, for both the old and new testaments are silent on the subject.

The causes, as already intimated, are found in a prejudice and a superstition. Cordially hating the old mythology, it was easy for the Christians to dislike its followers and their customs. The pagans burned their dead; and therefore the Christians stigmatized burning as a pagan custom. Being prejudiced they refused to adopt a good usage that was in vogue among their enemies; being illogical, they totally disregarded the fact that, while some heathen nations had used the torch, others had plied the spade and therefore cremation should not, any more than inhumation, be taken for a pagan custom.

But the preference for burial among the early Christians is easily intelligible on grounds quite independent of, and apart from, religious conviction. Burial could be conducted in secret, burning could not, and, in their long struggle with persecution, the early Christians must have found that secrecy was necessary to avoid molestation in the performance of those religious rites which every creed associates with the disposal of the dead.

In 1869, Professors Coletti and Castiglioni, "in the name of public health and civilization," introduced the question of cremation in the International Medical Congress at Florence. A resolution was passed at this congress urging that every possible means be employed to promote the substitution of incineration for burial. This was the beginning of the modern cremation movement.

From Italy it made its way to Germany, England, Sweden, France, Switzerland, Denmark, the United States, and finally Australia, and its propaganda is now world-wide.

## The Sentimental Aspect.

The sentimental aspect of the question under consideration seems to me entitled to much weight. The problem presented to us, uncomplicated by tradition and religious beliefs, is a very simple one. The soul, the vital principle, the ego, or whatever your special philosophy calls it, has departed from its tenement of clay, and we have simply to see that the discarded flesh may be broken up into its various chemical elements without injury to the living. There is nothing sacred or sacramental in burial apart from what man's ingenuity has invented. The grave is but a clumsy contrivance to save the feelings of the survivors by putting out of sight a grievous spectacle. I quote the following from the works of Jacob Bigelow, M. D., erstwhile a professor in the medical department of Harvard University: "Is there any more wisdom or philosophy, filial piety or humanity, public or private utility or religion, in enclosing in iron, stone or lead a putrescent human body, as if forever there to remain unchanged, than in treating a similar and equal mass of any other animal matter in the same way? Is it not rather to counteract the course of nature, as though we were wiser than its author?"

We constantly hear people alluding in terms of gratification to the "green sward that covers the graves of their ancestors," not knowing of, or refusing to believe in, the reeking mass of corruption which lies below. The truth about this subject must be disseminated, with a realization of which will come a determination on the part of thoughtful persons to guide their sentiments more in accordance with the facts.

Now what are the facts? I will only cite two witnesses and will not go into harrowing details. We have it from the lips of Mr. Roland Litchfield, a venerable and respected undertaker of Cambridge, Massachusetts, that "if the general public could know or see what he was obliged to know and see, there would never be another body put into the ground." And the late Reverend C. Voysey, of the Church of England, said: "If a graveyard or cemetery could be laid open and a section of it exposed to view, no one who had seen it would ever permit the body of anyone he loved to be buried."

Cremation offers a happy solution of a subject which, under any circumstances, is gruesome and often heart-rending.

The following editorial, from the British Medical Journal of June 14, 1913, also has a bearing upon this subject: "Medical practitioners should take every opportunity that comes in their way of urging the adoption of cremation. That it will in time become universal in civilized countries, is practically certain, and burial will be looked upon as a method of barbarism. No person of decent sensibility who has seen, in the Bargello at Florence, Gaetano Julio Zumbo's famous models in colored wax of corpses rotting in the grave, could bear to think of the bodies of those whom he loved exposed to such slow and hideous corruption. The earth-burial of bodies is at once a danger to the living and a desecration of the dead."

But the question is: What do we cremationists offer as a substitute for this revolting condition? We offer to reduce the human body to its constituent chemical elements in as many minutes as burial takes years, simply by a process of rapid combustion with no attendant horrors, with no peril to the living and at a minimum of cost.

I believe that the statement of Dr. Knox, the late Bishop of Manchester, in regard to this matter, hits the nail squarely on the head. It is as follows: "I am quite sure that in spite of strong sentimental objections very naturally entertained, we shall come to see that under the conditions of modern life cremation is not only preferable from the sanitary point of view, BUT THAT IT IS ALSO THE MOST REVERENT AND DECENT TREATMENT OF THE BODIES OF THE DEAD, and one that is in entire accordance with Christian belief."

## Cremation From a Sanitary Point of View.

But why, you may ask, are we cremationists so insistent in urging this method for the disposal of our dead?

Because, above all, it is more sanitary. Cemeteries pollute the ground, and thus the water supply, and often the very atmosphere in their neighborhood. It is because of the physical danger to the health of the living that burial is generally forbidden within city limits. In fact, the municipality of Saint Gall, in Switzerland, is so enlightened that it will not permit earth-burial within the city limits of its jurisdiction; cremation there is compulsory in this sense, that if the friends of a deceased person wish the remains to be buried the body must be taken elsewhere.

George Eliot prayed the famous prayer that she might become after death "The sweet presence of a good diffused, and in diffusion ever more intense." Many people, however, by their bodies being buried, become the malignant presence of an ill diffused, and thus contribute to the disease and suffering of the world.

Cremation, on the other hand, insures rapid decomposition and destroys all offensive impurities, rendering inert all that is infectious. In fact, as Sir Spencer Wells very appropriately termed it, it is "Purification versus Putrefaction."

We have it on the authority of no less a man than Sir Henry Thompson, late Professor of Clinical Surgery in University College, London, that: "No dead body is ever placed in the soil without polluting the earth, the air, and the water above and about it." It was on this account that he advocated incineration, for, said he: "An infinity of mischief may happen by burial, but none can happen by cremation."

In an editorial on "Cremation During Epidemics," dated February 6, 1897, the British Medical Journal declares: "Surely it is time that the advice first given by Sir Henry Thompson over 20 years ago, and frequently repeated, that the body of every person that has died from an infectious disease should be cremated, should be acted on. . . . . Cremation is an act of wise precaution and just regard for the interests of the living."

"It is plain," says Dr. R. S. Tracy, in the last edition of the Ziemssen Cyclopedia of Medicine, "without argument that a complete destruction of the body by these modern methods is, in a sanitary point of view, far preferable to burial."

In his work on Sanitary Science, Dr. Edmund Parkes, Professor of Military Hygiene in the British Army Medical School, severely condemns the practice of interment of the dead. "Burying in the ground," he states emphatically, "is the most unsanitary of all the plans of disposing of the dead."

"That the dead kill the living," says Dr. W. H. Curtis, "is only too true; and that cholera, yellow fever, and the whole list of zymotic and infectious diseases are capable of being transmitted through the contamination of water and air supplies is no more difficult of demonstration than it is to prove the ability of sewer-gas or sewer-water to propagate disease."

Professor Victor C. Vaughan, of the medical department of the University of Michigan, holds that the popular belief that if water filters for any distance through the soil it is purified is an erroneous belief, and cites a number of experiments made by himself and numerous cases in support of the assertion.

In a paper on "Water Supply," which was read at a sanitary convention that was held at Ypsilanti, July 1, 1885, and reproduced in the Michigan State Board of Health Reports, he cites cases that are positively startling in the possibilities suggested.

One of them is a famous case that illustrates to what extent organic matter may be carried through the soil and still retain its poisonous properties: "A number of years ago typhoid fever broke out in a little town in Switzerland in the most virulent form that had been known for a number of years in the little mountain town, and where did it come from was the question asked. Upon the opposite side of the mountain, and situated higher than this village, was another little village in which a few weeks before typhoid fever had prevailed; a number had been sick, and some had died of the disease. Passing through this village upon the upper side of the mountain was a little stream which, after passing the village, was used for irrigating a meadow, turned from its course, and spread over the meadow land. Into this stream had been thrown the dejections of a typhoid fever patient, in this water his clothes had been washed. The question was asked then: 'Was it possible for this water to pass into the mountain upon one side and come out as a spring upon the other, and infect the people with this disease?' The people in the typhoid fever locality used the water from a spring, and it was noticed that the typhoid fever prevailed only among those who did use this water. The government investigated this matter, and there was distributed over this meadow land fifty hundredweight of common salt, and they found that the amount of salt in this spring water on the other side was noticeably increased. Evidently there was communication between the meadow and the spring. Here was water carried through nearly a mile of earth. The question was: Was there a subterranean current, or did the water percolate through the soil? In order to settle this question, several hundredweight of flour were scattered over the meadow land, and starch was examined or tested for in the water on the other side, but it was not found, and never did it appear there, showing that there was no subterranean current, that the water percolated through the soil. This is the most famous case we have, and amounted to positive demonstration, or as nearly so as can be, as to the origin of typhoid fever."

The other case upon which Professor Vaughan laid particular stress in his paper happened in the State of Michigan. "There is in the county of Kalamazoo, a nice little village by the name of Richland. It is situated in a most beautiful farming country. The farmers of that region have grown rich on account of the fertility of the soil and other special advantages. A few years ago the village board desired to select a new site for a cemetery and chose one within the village limits, and within 30 rods of a well owned by an old physician, Dr. Patchin. The old doctor objected to the location of the cemetery so near his house and well, and as the result of his objection there was a lawsuit, and if you will pardon me I will mention something of the condition of the land and some experiments that were made. There were some 18 inches of rich prairie loam, and then below this some two or three feet of hard-pan, below this were 18 or 20 feet of gravel, such as we have all through the southern part of Michigan. In digging the graves, the bodies would be put into this gravel. The gravel was so loose and so moist that in digging graves it was necessary to put in boxing to prevent the gravel from pouring in while the grave was being dug. Below the gravel and about 30 feet below the surface was an impervious bed of clay, with a slope from the cemetery towards the well. It became a question now as to whether there was a possibility of the contamination of this well from burying bodies in the proposed new cemetery. I was called, and after studying the geological formation, concluded there was a possibility of such contamination. The well was pumped dry twice a day, and on an average 15 barrels taken from it at each pumping. To show how ridiculous some theories are that have been advanced upon that subject, I will state that I was met in court with this statement: 'That it would be impossible for any of the water or rain falling upon this cemetery, 30 rods distant, to reach the well, because, as was found in some old book, all the water that goes into a well is that which falls upon a surface which will be enclosed in a circle whose center was the mouth of the well and whose radius was the depth of the well. This statement was made independent of any lay of the land or the geological formation, and without any consideration whatever of the structure of the surrounding country. Fortunately this can be met very easily. Thirty barrels of water were pumped from the well each day. We know the amount of rainfall in Michigan per year and we can calculate very easily the number of barrels that would fall upon this surface enclosed in a circle whose center was the mouth of the well and whose radius was the depth of the well, and as the result of such a calculation we find that the amount of rainwater falling upon this surface during the year would not supply the well two or three days. Returning home and detailing the trip I had had to Dr. Langley, he suggested that a direct experiment might be made to see whether matter would pass from the proposed cemetery to the well or not. He tested the water of the well for lithium, a substance easily detected, found it was absent, and then had a salt of lithium sown over the proposed cemetery, and then examined the water of the well each day thereafter; and on the eighteenth day after the lithium was sown over the cemetery it was found in the water of the well, showing that the water that fell upon the cemetery did unquestionably penetrate the soil, pass down to the impervious bed of clay, which was the watershed upon which the water in the well collected, and thence into the well. Notwithstanding proof so positive as this, a learned judge in Michigan dismissed the case and allowed the cemetery to be located there, with the possibility of poisoning a number of families. As a result, the families of the neighborhood had to discontinue the use of their well water."

If further proof is required, and I might say, incidentally, that I do not know of any higher scientific authority than Professor Vaughan, you will find it in the works of Professor Pettenkofer, of the University of Munich. His investigations and experiments have shown conclusively the manner in which cemeteries exert their poisonous influence through air and water.

In the Report of the State Board of Health of California for 1894, there is a very interesting article by Dr. W. F. Nutt, then Professor of the Principles and Practice of Medicine in the University of California, from which I quote as follows: "Two or three years ago there was an epidemic of malignant diphtheria on the Point Lobos road. I found that the families afflicted were using water from a surface well within a few hundred feet of the Odd Fellows' cemetery."

According to Dr. Henry B. Baker, in the Michigan State Board of Health Report for 1874, a terrible epidemic of cerebro-spinal meningitis that wasted the village of Petersburg, Michigan, in the early part of 1874, was attributable to a spring five paces from a house and fifteen paces from a cemetery, which is on ground from 12 to 15 feet higher than the level of the spring. About 18 paces from the spring was a recent grave.

Professor R. C. Kedzie, of the Michigan State Agricultural College, in submitting his analysis of the water of this spring, said: "The presence in these waters of unusual quantities of chlorides of ammonia, of nitrates, and nitrites, and finally of phosphates, shows these waters to be very unusual in their composition. We might account for the presence of all these substances if matters very rich in nitrogen and phosphorus, i. e. flesh, were undergoing decomposition in their vicinity and the results of this decomposition passed directly into this water. The fact that the spring is near and lies below the level of a graveyard, that the well is in the midst of an old Indian graveyard, gives much plausibility to this explanation. The fact that the first person attacked with cerebro-spinal meningitis in Petersburg used the water of this well, and that others who used the spring water were attacked with the same disease, would very naturally attract very significant attention to the composition of these waters as having some possible connection with the terrible epidemic which has wasted that village."

Just one more reference and I will be through with this part of my subject. In a recent correspondence with the Chief Engineer of the Massachusetts State Board of Health, that gentleman gave me the following information: "In order to determine the probable effect of cemeteries upon the character of the water, especially the ground water beneath them, experiments were made by this Board many years ago. The experiments were carried on by this Board with extremely interesting results, showing great pollution of the ground water resulting from the burial of the carcass of a small dog in ordinary cemetery soil subjected to ordinary rainfall."

Our Boards of Health, having recognized the dangers connected with the contamination of urban water supplies through decaying human remains, now almost universally condemn the use of well water and in most of our large municipalities the water supply is procured at a considerable distance from the city limits and tested from time to time so as to ensure purity. These safeguards have done much to reduce the dangers alluded to to a minimum, although in some cities it is still advisable to boil and filter your drinking water before use.

While the evidence in regard to the pollution of our water courses in the proximity of graveyards is of the most positive character, that relative to the vitiation of the air under the same circumstances is not so conclusive. The way in which I account for this is upon the presumption that the effect of the effluvia from cemeteries upon the health of the individual is very subtle and that it must be continued for a long time in order to produce a deleterious result. With the removal of cemeteries to suburban locations, this danger is also being materially reduced.

But the fact that the township of Newtown, Long Island, which is surrounded by cemeteries containing the decaying remains of 1,250,000 human bodies, has the highest death rate in the state of New York, gives abundant food for reflection, as does the well authenticated fact that all the cases during the alarming prevalence of typhoid fever in Carmansville, New York, in March, 1883, developed "on three sides of and close to Trinity cemetery."

In addition to this, I would also kindly ask you to consider the following reports from page 542 of Ziemssen's Cyclopedia of the Practice of Medicine, New York, 1879: "Dr. Allen mentions an instance where sickness was caused by breathing the vitiated air emitted from a graveyard. In 1814, soldiers stationed near the Potters' field, in New York, which was most offensive, were attacked with diarrhea and fever. After removal—which was promptly after the commencement of the sickness—one of the sick died, and the others recovered. Dr. Barton is authority for the statement that the yellow fever was greatly aggravated in the epidemic of 1853, in New Orleans, by the exhalations from the overcrowded intramural tombs. Norfolk and Portsmouth suffered in the same way during the memorable epidemic of yellow fever in 1855, which nearly depopulated those towns. Most of the interments were made within the towns, and under most unfavorable circumstances as to soil. The water level was only six feet from the surface, and the graves were made about four feet deep, and frequently contained as many as two or three bodies.

"Dr. Rauch attributed the spread of the cholera in the vicinity of a cemetery in Burlington, Iowa, in 1850, to effluvia generated by the decomposition of bodies recently buried. No cases occurred in this neighborhood until after 20 bodies had been interred, and, then, in the direction of the wind from the cemetery."

We now come to the consideration of the possibility of disseminating infectious diseases through earth-burial and I am going to place the evidence before you, without any rhetorical embellishments, as though you were a jury of twelve men good and true and were bent upon trying the case of cremation versus earth-burial strictly upon its merits.

According to the Reference Handbook of the Medical Sciences, pages 358 and 359, New York, 1901: "The experiments of Drs. Koch, Evart and Carpenter have shown that the blood of animals dying of splenic fever may be dried and kept for years, and pulverized into dust, and yet the disease germs survive with power to produce infection. We all know of the plague of Modena, breaking out in 1828, in consequence of excavations made in the ground where three hundred years before victims of the plague had been buried. A similar case occurred a few years ago in Derbyshire, England, and the terrible violence of the cholera in London, in 1854, was charged to the upturning of the soil wherein the plague-stricken of 1665 were buried.

"In 1843 the population of Minchinhampton, England, was nearly decimated by a disease manifestly caused by using as fertilizer for their gardens the rich soil of an abandoned graveyard. In 1823, an outbreak of the plague in Egypt was traced to the reopening of a disused graveyard at Kelioub, fourteen miles from Cairo. As a consequence, 2,000 died in Kelioub and the mortality in Cairo was frightful. A few years ago, the villages of Ritondello and Bollita, in Italy, were decimated by a terrible epidemic, the origin of which was unmistakably traced to the adjoining cemeteries.

"In a field in the Jura, where a diseased cow had been buried two years before at a depth of nearly seven feet, the surface earth not having been disturbed in the interval, Pasteur found that the mold contained germs which, introduced by inoculation into a guinea pig, produced splenic fever and death. Further, if a worm was taken from an infected spot, the earth in the alimentary canal of the worm contained spores or germs of charbon or anthrax which, inoculated, propagated the disease; and the mold deposited on the surface by the worm, when dried into dust, is blown over the grass and plants on which the cattle feed, and may thus spread the disease. . . . Pasteur said that in cemeteries it is very possible that germs capable of propagating specific diseases of different kinds quite harmless to the earthworm may be carried to the surface of the soil ready to cause disease in the proper animals. 'The practical inferences in favor of cremation,' in the words of the British Medical Journal, 'are so strong that, as Pasteur himself pointed out, they need not be enforced.'"

When Dr. Felix Formento wrote: "Soils once saturated with products of decomposition may retain for an indefinite period their infective properties, and continue for generations to be a source of danger," perhaps he had in mind the report made by Dr. Domingo Freire, who investigated the cause of the fearful epidemic of yellow fever that wrought such ravages in Rio de Janeiro a few years ago. "I came upon the dreadful fact that the soil of cemeteries in which the victims of the outbreak were buried," the doctor reported, "was positively alive with microbean organisms exactly identical with those found in the vomitings and blood of persons who had died of yellow fever in the hospitals. The characteristic parasite permeates the soil of cemeteries even to the very surface. From the grave of a victim, buried for a year, one foot beneath the surface I took earth, and though it manifested nothing remarkable in appearance, or smell, microscopic analysis disclosed it thickly charged with yellow fever germs. The cemeteries are nurseries of yellow fever, the perennial foci of the disease."

No wonder Dr. Wolfred Nelson, of New York, in a notable contribution to the literature of yellow fever, unconditionally recommends "incineration as a remedy to stamp out the disease."

A dispatch from Montreal, dated October 26, 1885, stated that a grave digger of St. Sulpice, named Robitaille, made a grave next to where a man who had died from smallpox a month before was buried. At the time there was no smallpox in the village; but Robitaille, some days after digging the grave, sickened and finally died of smallpox, making it evident that he contracted the disease from the body of a man who had been buried for a month. If you care to look the matter up, you will find the telegram in question in the files of the Detroit Evening News.

In the chapter devoted to tuberculosis, of the Twentieth Century Practice of Medicine, which was published in New York in 1900, Dr. S. A. Knopf, a celebrated authority on the White Plague, affirms that "a chapter on the prophylaxis of tuberculosis would not be complete without mentioning the danger arising from the present almost universal mode of the disposal of the dead." "I have already referred to the experiments of Lortet and Despeignes," he says, "whereby it was demonstrated that earthworms are capable of ingesting and ejecting the tubercle bacilli without the microorganisms losing their virulence. Other experimenters, such as Galtier, of Lyons, showed that the bacillus of tuberculosis resisted putrefaction for several months. Gartner buried the bacillus for one year, and it retained its infectious property, and Schottelius even claims that it resisted putrefaction for two years. In view of these and numerous other proofs of the danger of burying those who have died from tuberculosis, the Third Congress for the Study of Tuberculosis, held in Paris in 1894, adopted resolutions asking for obligatory disinfection of the bodies of deceased tuberculous individuals. A motion for recommending obligatory cremation of such bodies was not carried. Leaving the religious objection to cremation out of consideration, it seems to me that the objection raised from a medico-legal standpoint (inability to discover poison after cremation) can hardly have any weight in a case of death from a chronic tuberculous disease. As one of the means of stamping out tuberculosis in the human race, I would certainly favor the cremation of all bodies of individuals having died of a tuberculous disease."

"Do we not shun, and that most wisely," Dr. Wheelhouse, of Leeds, England, demands to know, "the presence of those afflicted with infectious diseases as long as they remain amongst us; and yet, no sooner are they removed by death then we are content, with tender sympathy, indeed, and most loving care, it is true (but with how much wisdom?) to lay them in the ground, that they may slowly dissipate their terribly infectious gases through the soil, and saturating that, may thereby recharge the rains of heaven, as they filter through it, with all their virulence and terrible power of reproduction in the systems of the living. I am not the thorough and entire believer in the disinfecting and depurating power of the soil that I once was, for terrible examples of its failure have, in my judgment, come under my notice."

In view of this statement and the cases cited, particular weight attaches to the following from the pen of Dr. Alfred E. Regensburger, of San Francisco, which you will find in the 1894 Report of the California State Board of Health: "Latterly it has been contended that there need be no more danger from the proximity of cemeteries to the dwellings of the living, modern rapid means of communication making it possible to remove the cemeteries so far away that they cannot affect the sanitary state of the people. Supposing that you remove the cemeteries a distance from the cities, what right have you to plant such a menace to life and health in the midst of a rural population? May it not in time be the center of a town? It may even encroach upon the city limits, which it was never expected to touch. It does NOT solve the question."

In concluding that part of my address which is devoted to the sanitary aspect of incineration, I wish to quote what we cremationists regard as a prophetic utterance that is rapidly coming true, from Coplin and Bevan's "Manual of Practical Hygiene," Philadelphia, 1893: "What is true of sewage as to the dangers of water supply," these authors maintain, "applies with more vividness to the disposal of the dead. It is almost impossible to estimate the dangers arising from badly selected and improperly cared-for burial sites, and if to these we add improperly constructed graves, we have a complexus of dangers which must appall us. It is not improbable in the writers' minds that with a proper disposition of the dead, combined with improved sanitary regulations, a great many of the diseases now rife might be stamped out. Popular education has not yet arrived at that point of advance where cremation can be universally accepted, but the more rapid the diffusion of scientific knowledge the more probable the general acceptance of incineration."

When the circumstances placed before you are taken into consideration is it not evident that cremation is really naught but a demand of hygiene in favor of our own health, and is it not possible that the day may come when science will put upon society the onus of proving not that cremation but that earth-burial shall continue to be permitted?

## The Economic Argument.

In justifying our propaganda, I have made a mention of the possibility of the overcrowding of American cemeteries and have declared that we will make an earnest endeavor to prevent such conditions as exist, for instance, in the graveyards of London, a city in which 200 persons die every day or 72,000 in the course of a year. In one locality, I regret to say, we are already too late, but with reference to the greater part of our continent my statement applies.

The Reverend Dr. John D. Beugless thus describes the burial grounds of New York City: "Of the great cemeteries about New York, there is not one, not even Woodland or Greenwood, in the public lots of which three or more bodies are not put in one grave. . . . In the public or poor quarter of Calvary Cemetery a far worse state of things obtains. A trench is dug, seven feet wide, ten to twelve feet deep, and of indefinite length, in which the coffins are stowed, tier upon tier, making a flight of steps five or more deep, and with not enough earth to hide one from the next. And this is our vaunted Christian burial in this new country, with its myriad of broad acres! What shall our children say of us, when they come, perforce, from stress of space, to build their dwellings upon these beds of pestilence?" Comment is superfluous!

We are all, I believe, satisfied on one point, namely, that the earth was made for the benefit of the living and not the dead. If that is true, how can we reconcile it with the fact that hundreds of thousands of acres are withheld from public use by being devoted to the dead all over the union. In the city of Detroit, there are 420 acres within the confines of Elmwood, Mt. Elliott and Woodmere cemeteries, which have become a part of the municipality and are all within the city limits. All of this land, it should be remembered, is exempt from taxation, as are 4,000 acres that are occupied by cemeteries in the immediate vicinity of New York and Brooklyn. Instead of this enormous waste of valuable land that could be used to better advantage for the production of food or for dwelling purposes, a columbarium or urn-hall covering ONE acre would hold the remains of all the dead interred in these graveyards if they had been cremated. The advantage is obvious.

Once in a while I run across a person who expresses the conviction that it would be best to preserve the remains of the dead in mausoleums. Of all the forms of disposing of the departed, this is beyond the shadow of a doubt the very worst. It would mean the accumulation of decomposing material for centuries to come until finally this enormous mass of corruption would constitute a problem to the living that would be far more difficult to solve than the problem presented by the disposal of the dead now. In view of the following case and my own knowledge concerning decomposition, moreover, I am very skeptical regarding the possibility of preserving human remains to such an extent that they will not constitute a menace to public health. In a book entitled "Cleanliness Versus Corruption," Lord Ronald Sutherland Gower relates this rather amusing occurrence: "Many years ago the Khedive Ismail gave my brother at Cairo a handsome mummy in its painted case, which my brother brought to London and placed in the hall in Stafford House. Wishing to see the contents of this mummy case, my brother invited some 'savants' to come and open it. This was done, and among those who assisted in the unrolling of the mummy, Sir Richard Owen took a chief part. Slowly and carefully the case was opened, and the ligaments removed from off the body. During this operation an acrid smell began to make itself felt, and soon the great hall was filled by an old world or mummy perfume, which gradually proved unbearable to the onlookers, and soon the 'savants' and others beat a hasty retreat, and the poor wreck of the Egyptian woman, which Professor Owen declared to be that of a lady, was carted away rapidly and unceremoniously. I have heard that in the museum at Boulak, near Cairo, it has not infrequently been found necessary to throw away mummies owing to the condition they were in, which shows that even the best embalmed bodies can make themselves unpleasant after thousands of years have passed over their carefully preserved remains."

I am convinced there is but one way of solving the problem of a proper disposal of the dead, and that is to assist nature and not to prevent the execution of her laws. Cremation does in an hour or two what it takes many years to accomplish in the grave, and the final result is the same—ashes to ashes, dust to dust.

As for the processes by means of which the incineration of human remains is accomplished, I do not propose to discuss them here because they are of interest only to those who, like mechanical engineers, are in a position to understand and appreciate the technical difficulties presented. Suffice it to say that considerable progress has been made and that the early coke and coal furnaces of the closed muffle type have been largely superseded by apparatus heated by means of crude petroleum or gas. The electric incinerator, however, is still a dream of the future and will not be feasible until the heating of houses by means of electricity becomes practicable. But when the process is complete, nothing remains but a few fragments of calcined bones and delicate gray ashes, perfectly pure and odorless. In all candor, is not this a more fitting destiny for the cast-off body than that it should remain for years a mass of loathsome and death-bearing putrefaction?

Cremation presents another advantage, in addition to those already enumerated, that is of considerable importance to those contemplating a European tour. It is a fortunate circumstance that in the unhappy event of the death of one traveling abroad the relatives may at much greater convenience and less expense receive the ashes. Preparation of a corpse for transportation across the ocean is so costly and unsatisfactory that ordinarily a person dying in a foreign land is buried there. Under cremation it is possible for one passing one's last days in Rome or among the high Alps still to arrange to be gathered among one's forefathers in Detroit or any other Michigan town.

## Arguments Against Cremation.

Lest I be accused of one-sidedness, I will now briefly review some of the objections that have been raised against cremation. It has been said that incineration would destroy the evidence of poisoning. But this contention is hardly of much weight in view of the fact that mineral poisons can be discovered in the ashes, while with the exception of the one alkaloid, Strychnine, all vegetable poisons—those most to be dreaded—decompose with the body, and, therefore, as to these the result will be the same whether the body be burned or buried.

I do not know what the statistics are in this country, but in Germany the ratio is one exhumation to 600,000 interments, and in England there is only one to a million, in cases where murder is suspected. Now it must be remembered that in many of these instances there is not a conviction, which still further reduces the ratio. Under these circumstances, is it surprising, I ask, that Professor Rudolph Virchow, of the University of Berlin—and let me say in passing that no name stands higher in German medical science—in his celebrated speech in the Reichstag, in which he advocated the universal adoption of cremation, should contend that the blessings conferred by incineration greatly outweigh the doubtful advantage of disinterments in suspected cases of poisoning?

Moreover, we cremationists are perfectly willing to submit to the most rigid regulations on the part of the authorities, including the performance of an autopsy in case of necessity, but we must insist that these regulations also be extended to inhumations in every case in which the cause of death is not perfectly clear. To apply them to incineration alone would be a rank injustice and manifest discrimination.

I shall leave it for others, far abler than I, to show the religious side of the practice of cremation. For that it has a religious side, none of us can deny. It embodies one of the highest principles of religion, the consideration of the welfare of our fellow men. And it carries into practice the teaching of all pure religion, namely, that the body is merely the garment of the soul.

But I cannot pass by, without notice, one so-called religious objection to cremation that is brought forward again and again although it has long since been refuted. I refer to the so-called argument that cremation, by its utter destruction of the body, would prevent the resurrection. To this the late Bishop Fraser answered: "The omnipotence of God is not limited, and He would raise the dead whether He had to raise our bodies out of churchyards, or whether He had to call our remains, like the remains of some ancient Roman, out of an urn in which they were deposited 2,000 years ago."

The Bishop of Manchester also disposed of this alleged objection most effectually by propounding the query: "If the premise that the incineration of the body precludes the resurrection is correct, what, in that case, became of the holy martyrs?" To which we may add: And what would become of the firemen of all denominations who perish in conflagrations and are entirely consumed?

To any one who will use his gray matter, who is accustomed to do his own thinking, the fallibility of the reasoning our our enemies on these points must be apparent. For the body is as utterly destroyed in the grave as in the furnace of the crematorium, the only difference being that it takes longer. The final result in both instances is the same.

It is quite possible that incineration may lead to a revival of burial in churches. In fact the authorities of Westminster Abbey now make it a rule that the remains of those who are to find a resting-place in that venerable building must first be cremated.

Albert Parsons once pointed out that there are three stages in the evolution of a cremationist.

First. At its first suggestion there is great reluctance in adopting so radical a change in the custom of centuries, if not horror at the thought of using fire.

Second. With further knowledge comes a willingness, if not strong desire, to be cremated, but reluctance as to the cremation of one's loved ones. Many of us pass through this stage before reaching the third—that of recognizing the advantage of cremation over earth-burial from every point of view, and having a thorough belief in it as a duty to future generations, sparing them from the menace of graveyards contaminating earth, water, and air in their vicinity. To this stage most thoughtful persons have come, and we believe that only a fair consideration of the subject and knowledge of it is necessary to make the reform well-nigh universal.

When you reach this point, a fourth step should be taken. Having the courage of your convictions, you should take every opportunity to convince others of the benefits to the living and to future generations of this method of disposal of the remains of the dead.

What cremation needs, above all, as the Reverend Frank S. Rowland declared, not long ago, is a campaign of education—missionaries—recruits on the firing line. Will you be one of these?

There is a considerable section of the public which theoretically believes in cremation and yet, when bereavement comes, practices earth-burial. And I want to say to you, right now, that I think more of an out and out opponent of incineration than I do of these lukewarm alleged friends of the reform. *If we wish to prevail, we must practice what we preach.*

I regret to say that the attitude of the American press in regard to cremation has been characterized by utter indifference. It is another indication that our newspapers reflect rather than lead public opinion.

The fact that cremation does away with the danger from exposure at the side of the grave in inclement weather is so evident that it only has to be stated. Many a man got his death o' cold while attending a funeral.

I am frequently asked: "What do people do with the ashes?" That depends upon their own personal disposition. Some persons keep these mementoes of the departed in their own home and derive consolation from their presence, others bury them in cemetery-lots, although the earth no longer has an office to perform, and still others place them in a niche of the columbarium or urn-hall at the crematorium.

I trust that you will pardon me if I once more revert to the beautiful aspect of cremation—the feature of the reform that is to me the most attractive. On the one side we have all the horrors of dire decay, on the other nought but a swift transition to an innocuous state.

Long has tenderness breathed, "Peace to thy ashes!" Poetry finds nothing repulsive in the relic ash. Gerald Massey wailed:

"Set is the sun of my years,
And over a few poor ashes
I sit in my darkness and tears."

Bayard Taylor writes of "ashes pale" and Tennyson says:

"And from his ashes may be made
The violet of his native land."

In conclusion, let me read to you how the poet Callimachus, in Eleusis, near Alexandria, was affected, B. C. 260-240, by hearing that his old friend, the poet Heracleitus, had died and been cremated. When nightingales are referred to in the verses the poems of the deceased are meant.

"They told me, Heracleitus, they told me you were dead;
They brought me bitter news to hear and bitter tears to shed.
I wept as I remembered how often you and I
Had tired the sun with talking, and sent him down the sky.

And now that thou art lying, my dear old Carian guest,
A handful of gray ashes, long, long ago at rest,
Still are thy pleasant voices, thy nightingales, awake,
For Death, he taketh all away, but these he cannot take."

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